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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,927	06/19/2003	Chien-Chung Han	HAN0302	6209

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EXAMINER

BRUENJES, CHRISTOPHER P

ART UNIT PAPER NUMBER

1772

DATE MAILED: 10/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Supplemental
Office Action Summary

Application No.

10/600,927

Applicant(s)

HAN, CHIEN-CHUNG

Examiner

Christopher P. Bruenjes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 24-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

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DETAILED ACTION

Examiner's Notes

1. It was determined in the telephone interview on September 22, 2005 between the attorney of record Wayne Liauh and Harold Pyon and myself that in order to fully address the issues of the last amendment filed August 15, 2005; a supplemental final rejection would be established. Therefore, the amendment filed August 15, 2005 is fully entered into the record.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 16, the limitation "share a common wall" renders the claim vague and indefinite. It is not understood if "common wall" refers to the walls of the tubes being joined to form one wall, in which multiple layers are

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possible or if tubes sharing a common wall if referring to a structure in which one sheet is formed having multiple holes or cavities formed within the sheet that are considered tubes.

Regarding claims 3, 17, and 20, are indefinite in light of the newly added limitation to claims 1 and 16 that the tubes share a common wall. It is not understood how the tubes can share a common wall, while at the same time an inorganic or organic binding agent such as a polymer, adhesive, or sol gel is present between the walls of the tube. The binding agents of these dependent claims are defined in the specification on pages 9 and 11-12 as being between the tubes, and does not suggest to one of ordinary skill in the art any other placement of the binding agent.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. The 35 U.S.C. 102 rejections of claims 1-3, 5-6, 9, 14-19, and 22 as anticipated by Haggard et al are repeated for the reasons set forth in the previous Office Action mailed February 17, 2005, Pages 8-11 Paragraph 6. However, in light of the amendments presented since that Office Action the rejection will

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be rewritten below to address all of the claims as currently presented.

Regarding claims 16-17, Haggard et al anticipate a device of an assembled structure comprising a plurality of carbonized carbon tubes wherein said plurality of carbonized carbon tubes include carbonized coating material (reference number 14, Figure 1C), carbonized fiber residue (reference number 16, Figure 1C), and a binding agent (reference number 12, Figure 1C). The fiber core of the tubes and/or the binding agent is formed of dissolvable polymer components (p.4, paragraph 35). Dissolvable polymer components as defined by Haggard et al include fully or partially soluble or partially dispersible polymers within a solvent or dissolving medium (p.3, paragraph 23). Therefore, when the fiber core and binding agent are dissolved prior to or during carbonization, at least parts of the fiber and binding agent are carbonized with the coating or sheath material. Note claims are given their broadest reasonable interpretation consistent with the specification. See MPEP 2111. Furthermore, while the claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allow. This

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means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. See MPEP 2111.01. In this case, no special definition is provided within the specification for "intimately adjoined" or "common wall". Therefore, the terms are given their broadest reasonable interpretation. Therefore, "intimately adjoined" is determined to define that the carbon tubes are joined together in an intimate fashion, so that there is no gap between the tubes. This definition requires only that the tubes be joined in a manner in which the entire space between the edges of each wall is filled. Also, "common wall" is given its broadest reasonable interpretation. A "wall" can be formed of single or multiple layers, and "common" only requires that the same "wall" be shared by more than one carbon tube. Two adjacent rooms sharing a common wall is an example of two tubes intimately adjoined, which share a common wall. Yet the wall in which the two rooms share is formed of multiple layers having different materials. In the same manner when two walls of carbon tubes are joined by adhesive the material between the two carbon tubes is one wall having three layers of material. Regarding claims 18-19, because the binding element is a polymer used to hold the tubes together the binding element is and provides interfacial covalent bonds at the contacted

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surfaces between said carbon tubes. Regarding claim 22, when the binding agent is still present in the final product the assembled structure of the carbon tubes has a honeycomb-like structure. Regarding claims 1-3 and 9, the device of Haggard et al has the same final structure as the claimed device of claims 1-3 and 9 because each monofilament fibers (reference number 16, Figure 1C) is covered with a sheath or coating material containing carbon (reference number 14, Figure 1C) and the plurality of coated fibers is formed into an assembled matrix containing a polymer binding agent (reference number 12, Figure 1C). Before or during carbonization the plurality of fibers is removed and the residue of fibers and coating or sheath layer along with at least the residue of the binding agent are carbonized to form an assembled structure containing a plurality of carbonized carbon tubes (p.4, paragraphs 35 and 36). The limitations that the carbon tubes are intimately adjoined and share a common wall are discussed above with regard to claims 16 and 17. Regarding claim 5, the chemical material forming the binding agent is thermally less stable than the coating material because the heating during carbonization drives off or removes the binding element (p.4, paragraph 37). Regarding claim 6, the binding agent is a polymeric matrix, which holds the fibers and sheaths in place within the assembled structure, so therefore

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inherently is able to chemically or physically interact with the surfaces of said coating layers and result in interfacial bonding structures among said carbon tubes. Regarding claim 14, the method used to assemble the carbon tubes receives little patentable weight because the final product is the same, in that both the claimed invention and Haggard et al are both assembled carbon tube structures regardless of how they were assembled. Regarding claim 15, when the binding agent is still present in the final product the assembled structure of the carbon tubes has a honeycomb-like structure.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. The 35 U.S.C. 103 rejections of claims 4, 7, 10-13, 20, 21, and 23 over Haggard et al in view of Tour et al are repeated for the reasons set forth in the previous Office Action mailed February 17, 2005, Pages 12-13 Paragraph 7.

5. The 35 U.S.C. 103 rejection of claim 8 over Haggard et al in view of Moy et al is repeated for the reasons set forth in the previous Office Action mailed February 17, 2005, Pages 14-15 Paragraph 8.

ANSWERS TO APPLICANTS ARGUMENTS

6. Applicant has not specifically argued the claimed invention over the prior art, instead relying on the amendment to differentiate over the prior art.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Bruenjes whose telephone number is 571-272-1489. The examiner can normally be reached on Monday thru Friday from 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher P Bruenjes
Examiner
Art Unit 1772

CPB *CPB*
October 5, 2005

Harold Pyon
HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

10/7/05